

Sheet (2)  
Fourier transform

Chk

① Find the Fourier transform for the following functions.

1 ⊗  $g(t) = A \text{rect}\left(\frac{t}{\tau}\right)$  ✓ 2 ⊗  $g(t) = e^{-t} \cdot u(t)$  ✓

3 ⊗  $g(t) = e^t \cdot u(-t)$  ✓ 4 ⊗  $g(t) = e^{-|t|}$  ✓ ✓

5 ⊗  $g(t) = e^{-\alpha t} \cdot u(t)$  ✓ 6 ⊗  $g(t) = A \text{rect}\left(\frac{t-t_0}{\tau}\right)$  ✓

7 ⊗  $g(t) = e^{-\alpha(t-t_0)} \cdot u(t)$  ✓ 8 ⊗  $g(t) = \text{sgn}(t)$  ✓ ✓

9 ⊗  $g(t) = u(t)$  ✓ 10 ⊗  $g(t) = A \text{rect}\left(\frac{t}{\tau}\right) e^{-j2\pi f_0 t}$  ✓

11 ⊗  $g(t) = A \text{rect}\left(\frac{t}{\tau}\right) \cos 2\pi f_0 t$  ✓

12 ⊗  $g(t) = A \text{rect}\left(\frac{t}{\tau}\right) \sin \omega_c t$  ✓ ✓

13 ⊗  $g(t) = A \text{sinc} 2\omega_c t$  ✓ ✓ 14 ⊗  $g(t) = \text{sinc} 100t$  ✓

15 ⊗  $g(t) = 3 \text{sgn}(t-3)$  ✓ ✓ 16 ⊗  $g(t) = e^{-\alpha(t-100)}$  ✓ ✓

17 ⊗  $g(t) = \delta(t)$  ✓ 18 ⊗  $g(t) = 10\delta(t-50)$  ✓ ✓

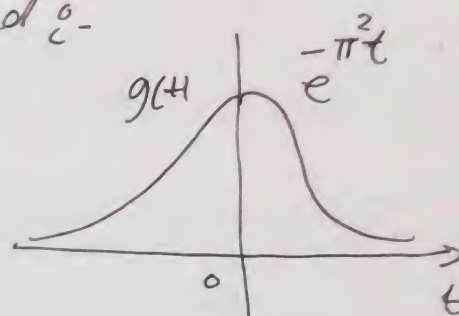
19 ⊗  $g(t) = A$  ✓ ✓ 20 ⊗  $g(t) = 100$  ✓

21 ⊗  $g(t) = e^{-j2\pi f_0 t}$  ✓ 22 ⊗  $g(t) = A_c \cos 2\pi f_c t$

23 ⊗  $g(t) = 20 \text{sinc} 20t$  ✓

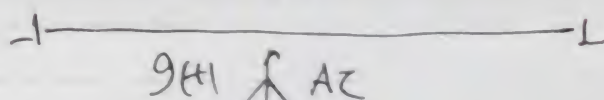
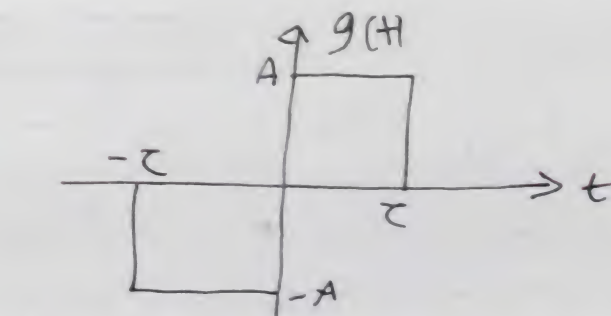
2) For the Gaussian pulse find:-

- a)  $G(f)$
- b) area under Curve  $g(t)$
- c) area under Curve  $G(f)$

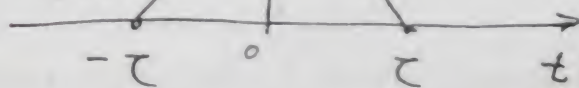


3) Find the Fourier transform for:-

a)



b)  $g(t) = A\tau \text{tri}(\frac{t}{2\tau})$



c)

